حلول نيلسون mcq

PART XXXII Bone and Joint Disorders

HAYDER ALMUSAWI

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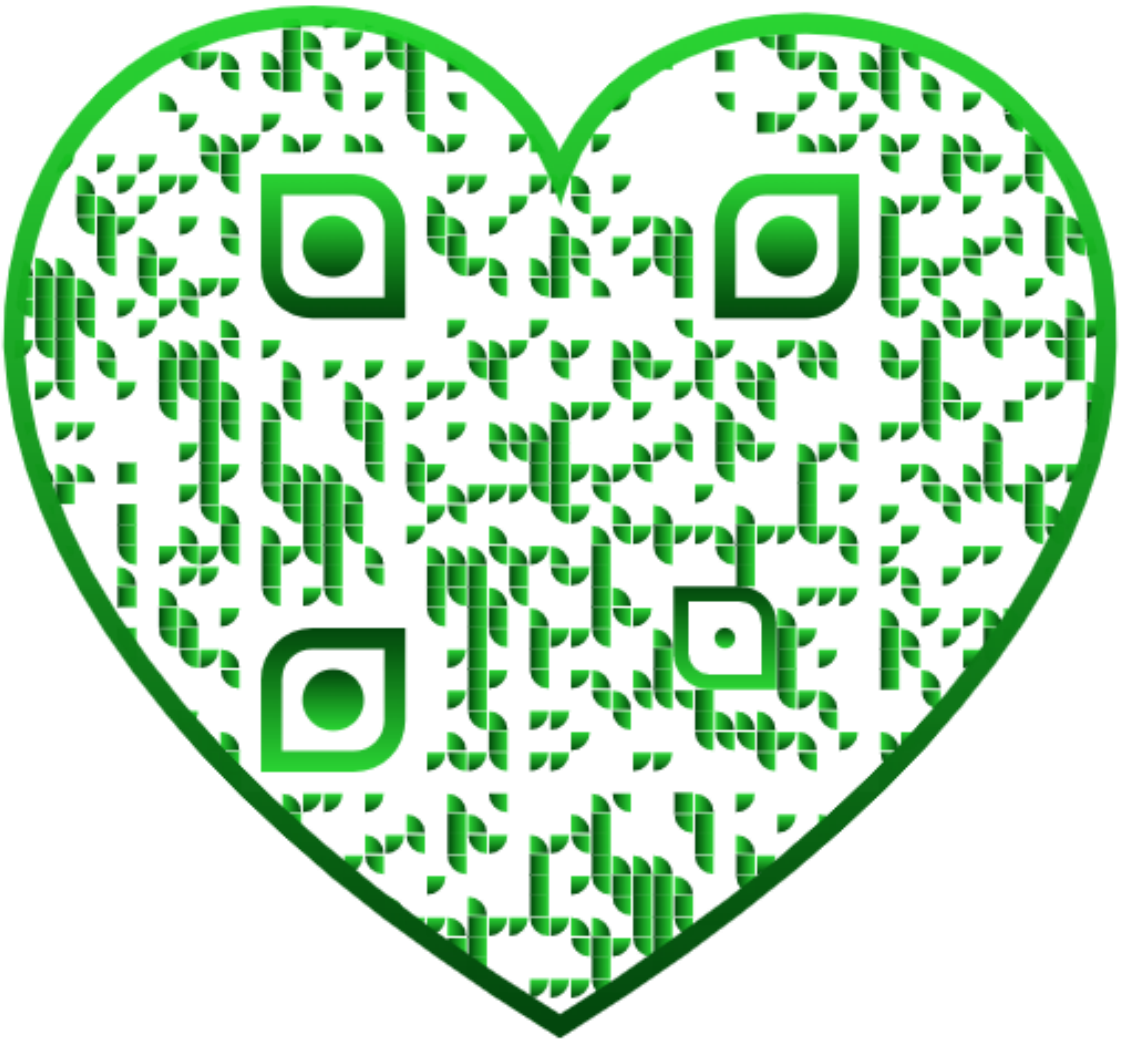
1. Normal full-term newborns can have up to 20-30 degree hip and knee flexion contractures, these contractures tend to resolve by
   A. 1-3 mo
   B. 4-6 mo
   C. 7-9 mo
   D. 10-12 mo
   E. 13-15 mo

2. The ossification centers that are typically present at birth include all the following **EXCEPT**
   A. distal femur
   B. proximal tibia
   C. distal humerus
   D. calcaneus
   E. talus

3. The gait of a child become similar to that of an adult at
   A. 3 yr
   B. 5 yr
   C. 7 yr
   D. 9 yr
   E. 11 yr

4. A rocker-bottom foot describes
   A. congenital vertical talus
   B. flexible flatfoot
   C. calcaneovalgus foot
   D. congenital talipes equinovarus
   E. metatarsus adductus

5. Polydactyly is the most common congenital toe deformity, it may be preaxial (great toe) or postaxial (5th toe), and occasionally one of the central toes is duplicated. Which of the following statements is **TRUE**?
   A. it is seen in approximately 2 in 100,000 births
   B. it is bilateral in 10% of cases
   C. one-third of patients will also have polydactyly of the hand



D. it may be associated with Turner syndrome
E. surgical removal of the extra digit is generally performed after 2 years of age

6. Macrodactyly is seen in the following conditions **EXCEPT**
A. Proteus syndrome
B. Neurofibromatosis
C. Tuberous sclerosis
D. Klippel-Trenaunay-Weber syndrome
E. Alport syndrome

7. Pediatricians must understand normal limb development so as to recognize pathologic conditions during routine and targeted exams.
Of the following, the **TRUE** statement is
A. normal tibiofemoral angle at birth is 10-15 degrees of physiologic valgus
B. physiologic varus up to 12 degrees is reached in between 3 and 4 yr of age
C. normal varus of 7 degrees is achieved by 5-8 yr of age
D. persistence of varus beyond 2 yr of age may be pathologic
E. more than 35% of developmental genu varum and genu valgum cases need intervention

8. In evaluation of concerns relating to the limb, the examination should assess the exact torsional profile which include all the following **EXCEPT**
A. foot progression angle
B. femoral anteversion
C. knee – knee distance
D. tibial version with thigh–foot angle
E. assessment of foot adduction and abduction

9. In-toeing gait most commonly results from excessive femoral anteversion.
Of the following, the **TRUE** statements is
A. it is more common in boys than girls (2 : 1)
B. patellas are pointing outward when the foot is straight
C. diagnosis is made by CT
D. treatment is predominantly observation
E. anteversion >25 degrees is an indication for operative intervention

10. Which torsional defotmity can follow a slipped capital femoral epiphysis and increase incidence of degenerative arthritis?
A. external tibial torsion
B. external femoral torsion
C. internal tibial torsion
D. internal femoral torsion

E. metatarsus adductus

11. A school age child presented with a mass behind the knee. Physical examination reveals a firm mass in the popliteal fossa, medially located and distal to the popliteal crease. The mass is most prominent when the knee is extended. Knee radiographs are normal.
Of the following, the **MOST** likely diagnosis is

A. osteochondroma
B. osteochondritis dissecans
C. popliteal cyst
D. malignancy
E. juvenile idiopathic arthritis

12. An adolescent girl presented with pain beneath the patella, walking up and down stairs aggravates the pain; squatting, running, and other vigorous physical activities also exacerbate the pain. There is no history of antecedent trauma and there is no swelling. Pain is often relieved through knee extension.
Of the following, the **MOST** likely diagnosis is

A. osteochondroma
B. osteochondritis dissecans
C. popliteal cyst
D. patellofemoral pain syndrome
E. juvenile idiopathic arthritis

13. The proximal femoral ossification center (in the center of the femoral head) appears between

A. 1st and 3rd mo
B. 4th and 7th mo
C. 8th and 11th mo
D. 12th and 15th mo
E. 16th and 18th mo

14. There is marked geographic and racial variation in the incidence of developmental dysplasia of the hip (DDH).
All the following are true **EXCEPT**

A. 1.7 in 1,000 babies in Sweden
B. 75 in 1,000 in Yugoslavia
C. 188.5 in 1,000 in a district in Manitoba, Canada
D. 3.7 in 1,000 babies in Chinese newborn
E. 0% in African newborn

15. The **MOST** reliable sign of a dislocated hip after the 2nd month of life is

A. limited hip abduction
B. apparent shortening of the thigh
C. proximal location of the greater trochanter
D. asymmetry of the glutealor thigh folds
E. positive Ortolani test

16. Transient synovitis (toxic synovitis) is a reactive arthritis and is one of the most common causes of hip pain in young children.
All the following clinical manifestations are true **EXCEPT**
A. it is most prevalent between 3 and 8 yr of age
B. 70% of affected children have had a preceding nonspecific upper respiratory tract infection
C. symptoms often develop acutely
D. children are usually able to bear weight on the affected limb
E. usually associated with a high grade fever

17. Legg-Calvé-Perthes disease is a hip disorder of unknown etiology that results from temporary interruption of the blood supply to the proximal femoral epiphysis, leading to osteonecrosis and femoral head deformity.
Of the following, the **MOST** common presenting symptom is
A. limp of varying duration
B. pain
C. failure to ambulate
D. atrophy of the muscles of the thigh
E. an apparent leg-length inequality

18. Differential diagnosis of legg-calvé-perthes disease include all the following **EXCEPT**
A. osteochondromatosis
B. Schwartz-Jampel syndrome
C. Marfan syndrome
D. Maroteaux-Lamy syndrome
E. Martsolf syndrome

19. Scoliosis is a complex 3-dimensional spinal deformity that is defined in the coronal plane as a curve of at least 10 degrees, measured by the Cobb method, on a posteroanterior (PA) radiograph of the spine.
Which statement is **TRUE** about this disease?
A. adolescent idiopathic scoliosis (AIC) is 2-10 times more common in males than females
B. fathers with AIS transmit the disease to 50% of their children
C. high plasma melatonin levels have been noted in patients with progressive curvatures

D. girls with AIS have been noted to have a smaller foramen magnum
E. approximately one-third of girls with AIS have osteopenia

20. The normal thoracic spine has 20-50 degrees of kyphosis as measured from T3 to T12. A thoracic kyphosis in excess of the normal range of values is termed hyperkyphosis.
All the following conditions are associated with hyperkyphosis **EXCEPT**

A. trauma causing spinal fractures
B. osteogenesis imperfacta
C. Marfan syndrome
D. glycogen storage disease
E. mucopolysaccharidoses

21. Torticollis, literally meaning twisted neck, is not a diagnosis but rather a manifestation of a variety of underlying conditions.
All the following conditions may cause torticollis **EXCEPT**

A. positional deformation
B. Klippel-Feil syndrome
C. cervical lymphadenitis
D. supratentorial brain tumor
E. upper lobe pneumonia

22. Klippel-Feil syndrome includes the classic triad of a low posterior hairline, short neck, and decreased cervical range of motion.
Other associations include the following **EXCEPT**

A. Sprengel's deformity
B. congenital scoliosis
C. genitourinary anomalies
D. conductive hearing loss
E. congenital heart disease

23. Polydactyly or duplication of a digit can occur either as a preaxial deformity (involving the thumb) or as a postaxial deformity (involving the small finger)
All the following syndromes associated with polydactyly **EXCEPT**

A. Carpenter syndrome
B. Ellis-van Creveld syndrome
C. Trisomy 18
D. Orofaciodigital syndrome
E. Rubinstein-Taybi syndrome

24. Syndactyly is one of the common anomalies observed in the upper limb.
All the following syndromes are associated with syndactyly **EXCEPT**

A. Carpenter syndrome
B. Ellis-van Creveld syndrome
C. Laurence-Moon-Biedl syndrome
D. Fanconi pancytopenia
E. Trisomy 13

25. Fractures are the second most common manifestation of child abuse after skin injury (bruises, burns/abrasions).
All of the following fractures suggest nonaccidental injury **EXCEPT**
A. femur fractures in nonambulatory children
B. distal femoral metaphyseal corner fractures
C. posterior rib fractures
D. scapular spinous process fractures
E. distal humeral fractures

26. Fractures of the wrist and forearm are very common fractures in children.
All the following statements are true **EXCEPT**
A. the most common mechanism of injury is a fall on the outstretched hand
B. an eighty percent of forearm fractures involve the proximal radius and ulna
C. the majority of forearm fractures are torus or greenstick fractures
D. a significant malunion of a forearm diaphyseal fracture can lead to a permanent loss of pronation and supination
E. the AP and lateral radiographs of the forearm and wrist confirm the diagnosis

27. All the following statements are true regarding clavicular fracture **EXCEPT**
A. most common site for fracture is the junction of the middle and medial 3rd of clavicle
B. biceps function is important to assess as it is a prognostic indicator for future function
C. posterior medial clavicular physeal injuries are particularly problematic
D. fractures heal rapidly usually in 3-6 wk
E. a palpable mass of callus is usually visible in thin children

28. Toddler fractures occur in young ambulatory children. The age range for this fracture is typically around 1-4 yr.
All the following statement are true **EXCEPT**
A. children in this age group are usually unable to describe the area of injury well
B. radiographs may show no fracture
C. classic symptom is refusal to bear weight
D. Inflammatory markers may be ordered to rule out infectious processes
E. fracture is treated with bed rest and analgesia for approximately 2 wk

29. All the following are indications for external fixation in pediatric fractures **EXCEPT**

A. grades II and III open fractures
B. fractures associated with severe burns
C. fractures with soft-tissue loss
D. pelvic fractures
E. fractures with associated head injuries and spasticity

30. The two **MOST** common causative organisms of osteomyelitis in children with sickle cell anemia are

A. S. aureus and streptococci
B. Salmonella spp. and S. aureus
C. S. aureus and Pseudomonas aeruginosa
D. Enterobacteriaceae and S. aureus
E. S. aureus and Bartonella henselae

31. The second **MOST** common cause of osteomyelitis in children younger than 5 yr of age in some parts of the world is

A. S. aureus
B. Kingella kingae
C. Pseudomonas aeruginosa
D. Enterobacteriaceae
E. Bartonella henselae

32. The **MOST** common site of osteomyelitis in children is

A. femur
B. tibia
C. humerus
D. radius
E. ulna

33. Septic arthritis in infants and children has the potential to damage the synovium, adjacent cartilage, and bone causing permanent disability.
All the following statements regarding its epidemiology are true **EXCEPT**

A. septic arthritis is more common in young children
B. half of all cases occur by 5 yr of age
C. adolescents and neonates are at risk of gonococcal septic arthritis
D. majority of infections in otherwise healthy children are of hematogenous origin
E. infection of joints following penetrating injuries are uncommon

34. Which medical condition is regarded a contraindication for sport participation?

A. atlantoaxial instability
B. splenomegaly

C. carditis
D. long-QT syndrome
E. advanced heart block

35. Adverse effect of anabolic–androgenic steroids include all the following **EXCEPT**
A. infertility
B. gynecomastia
C. female virilization
D. hypotension
E. epiphyseal closure

36. Creatine is an amino acid mostly stored in skeletal muscle increasing muscle performance. Its use has been increased when other supplements have been withdrawn from the market.
Of the following, the possible adverse effect include
A. mouth ulcer
B. carditis
C. hepatitis
D. nephritis
E. genital sore

37. In competitive swimming, the **MOST** common injuries are of the
A. neck
B. shoulder
C. spine
D. hip
E. knee

38. Osteogenesis imperfecta, the most common genetic cause of osteoporosis.
Which of their types is mild and non-deforming?
A. I
B. II
C. III
D. IV
E. V

39. The **MOST** severe non-lethal form of osteogenesis imperfecta which results in significant physical disability is type
A. I
B. II
C. III
D. IV

E. V

40. The **MOST** common ocular manifestation in Marfan syndrome is

A. dislocation of the ocular lens
B. severe myopia
C. flat cornea
D. hypoplastic iris
E. retinal detachment

41. Current pharmacologic approaches that are considered the standard of care in Marfan syndrome (MFS) are

A. angiotensine converting enzyme inhibitors
B. beta blockers
C. calcium channel blockers
D. diuretics
E. angiotensine receptor II antagonists

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PART XXXII Bone and Joint Disorders ANSWERS

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1.**(B).** Normal full-term newborns can have up to 20-30 degree hip and knee flexion contractures. These contractures tend to resolve by 4-6 mo of age.
2.**(C).** The ossification centers that are typically present at birth are the distal femur, proximal tibia, calcaneus, and talus.
3.**(C).** The gait characteristics of a 7 yr old child are similar to those of an adult.
4.**(A).** Congenital vertical talus has also been described as a rocker-bottom foot or a Persian slipper foot. The plantar surface of the foot is convex, and the talar head is prominent along the medial border of the midfoot. The fore part of the foot is dorsiflexed and abducted relative to the hindfoot, and the hindfoot is in equinus and valgus.
5.**(C).** It is seen in approximately 2 in 1,000 births and is bilateral in 50% of cases. Conditions that may be associated with polydactyly include Ellis-Van Creveld (chondroectodermal dysplasia), longitudinal deficiency of the tibia, and Down syndrome. Treatment is indicated for cosmoses and to allow for fitting with standard shoes. This involves surgical removal of the extra digit, and the procedure is generally performed between 9 and 12 mo of age.
6.**(E).**
7.**(D).** The normal tibiofemoral angle at birth is 10-15 degrees of physiologic varus. The alignment changes to 0 degrees by 18 mo, and physiologic valgus up to 12 degrees is reached in between 3 and 4 yr of age. The normal valgus of 7 degrees is achieved by 5-8 yr of age. Persistence of varus beyond 2 yr of age may be pathologic and is seen in conditions such as Blount disease. Overall, 95% of developmental physiologic genu varum and genu valgum cases resolve with growth.
8.**(C).**
9.**(D).** It occurs more commonly in girls than boys (2: 1) in children 3-6 yr of age. The patellas are pointing inward when the foot is straight, and compensatory external rotation of the tibia is demonstrated. Diagnosis is made clinically on examination; CT can provide objective measurements but is rarely indicated. The torsion usually corrects with growth by 8-10 yr of age. Persistent deformity, unacceptable cosmesis, functional impairment, anteversion >45degrees, and no external rotation beyond neutral are some of the indications for operative intervention.
10.**(B).** External femoral torsion can follow a slipped capital femoral epiphysis. The disorder is associated with an out-toeing gait and increased incidence of degenerative arthritis. If slipped capital femoral epiphysis is detected, it is treated surgically.
11.**(C).** Popliteal cysts, or Baker cysts, are cystic masses filled with gelatinous material that develop in the popliteal fossa, the shallow depression located at the posterior part

of the knee. They are considered rare in children. They most commonly occur in the region of the medial head of the gastrocnemius and semimembranosus. Transillumination of the cyst on physical examination is a simple diagnostic test. Knee radiographs are normal and should be obtained to identify other lesions, such as osteochondromas, osteochondritis dissecans, and malignancies. The diagnosis may be confirmed by ultrasonography, MRI, or aspiration.

12.**(D).** Patellofemoral pain syndrome (PFPS) is one of the most common causes of knee pain, particularly in adolescent girls. The precise etiology of the knee pain remains unknown and is likely multifactorial.

13.**(B).** Between the 4th and 7th mo of life, the proximal femoral ossification center (in the center of the femoral head) appears.

14.**(D).** The incidence of DDH in Chinese and African newborns is almost 0%, whereas it is 1% for hip dysplasia and 0.1% for hip dislocation in white newborns. These differences may be the result of environmental factors, such as child-rearing practices, rather than to genetic predisposition.

15.**(A).** As the baby enters the 2nd and 3rd mo of life, the soft tissues begin to tighten and the Ortolani and Barlow tests are no longer reliable. Limitation of abduction is the most reliable sign of a dislocated hip in this age group.

16.**(E).** They are often afebrile or have a low-grade fever <38°C (100.4°F). The hip is not held flexed, abducted, or laterally rotated unless a significant effusion is present.

17.**(A).** The most common presenting symptom is a limp of varying duration.

18.**(C).** Differential diagnosis of legg-calvé-perthes disease include: Sickle cell disease, other hemoglobinopathies (e.g., thalassemia), chronic myelogenous leukemia, steroid medication, sequela of traumatic hip dislocation, treatment of developmental dysplasia of the hip, septic arthritis, mucopolysaccharidoses, and hypothyroidism.

19.**(E).** AIS is 2-10 times more common in females than males. Fathers with AIS *transmit* the disease to 80% of their children, but mothers with AIS *transmit* the disease to only 56% of their children. Lower plasma melatonin levels have been noted in patients with progressive curvatures. Girls with AIS have been noted to have a larger foramen magnum.

20.**(D).** Conditions associated with hyperkyphosis are: Trauma causing spinal fractures, spinal infections resulting from bacterial, tuberculosis, and fungal diseases, metabolic diseases such as osteogenesis imperfecta or osteoporosis, iatrogenic (laminectomy, spinal irradiation), neuromuscular diseases, neoplasms, congenital/developmental, disorders of collagen such as Marfan syndrome, dysplasias such as neurofibromatosis, achondroplasia, and mucopolysaccharidoses.

21.**(D).** Posterior fossa brain tumor.

22.**(D).** Other associations include Sprengel's deformity (congenital elevation of the scapula), congenital scoliosis, genitourinary anomalies (25-35%), sensorineural hearing loss (5%), and congenital heart disease (5-10%).

23.**(C).** Trisomy 13

24.**(B).** Ellis-van Creveld syndrome associated with polydactyly.

25.**(E).** Proximal humeral fractures.
26.**(B).** Eighty percent of forearm fractures involve the distal radius and ulna, 15% involve the middle third, and the rest are rare fractures of the proximal third of the radius or ulnar shaft.
27.**(A).** The most common site for fracture is the junction of the middle and lateral 3rd of clavicle.
28.**(E).** The fracture is treated with an above-knee cast for approximately 3 wk.
29.**(D).** Not all pelvic fractures only the unstable one.
30.**(B).** Streptococcus pneumoniae most commonly causes osteomyelitis in children younger than 24 mo of age and in children with sickle cell anemia, but its frequency has declined because of pneumococcal conjugate vaccines. Cases of Pseudomonas infection are related almost exclusively to puncture wounds of the foot, with direct inoculation of P. aeruginosa from the foam padding of the shoe into bone or cartilage, which develops as osteochondritis. Bartonella henselae can cause osteomyelitis of any bone, but especially in pelvic and vertebral bones.
31.**(B).** Kingella kingae may be the second most common cause of osteomyelitis in children younger than 5 yr of age in some parts of the world. The organism is increasingly recognized as a cause of osteomyelitis, spondylodiskitis, and septic arthritis, especially when polymerase chain reaction testing is employed.
32.**(A).** Femur 23-28%, tibia 20-26%, humerus 8-13%, radius and ulna 5-6%.
33.**(A).** Half of all cases occur by 2 yr of age and three-fourths of all cases occur by 5 yr of age.
34.**(C).** Carditis can result in sudden death with exertion. All the other conditions need individual assessment.
35.**(D).** Hypertension.
36.**(D).** Concerns about nephritis in case reports have not been supported by controlled studies.
37.**(B).** Injuries of the shoulder in competitive swimming are most common and generally a result of chronic, overuse. Swimmer's shoulder is a combination of subacromial bursitis and tendinosis of the rotator cuff and long-head of the biceps.
38.**(A).** I: Mild, Nondeforming, II: Lethal perinatal, III: Progressively deforming, IV: Moderately deforming
39.**(C).** Birthweight and length are often low normal. Fractures usually occur in utero. There is relative macrocephaly and triangular facies. Postnatally, fractures occur from inconsequential trauma and heal with deformity. Disorganization of the bone matrix results in a "popcorn" appearance at the metaphyses. The rib cage has flaring at the base, and pectal deformity is frequent. Virtually all type III patients have scoliosis and vertebral compression. Growth falls below the curve by the 1st yr; all type III patients have extreme short stature. Scleral hue ranges from white to blue. Dentinogenesis imperfecta, hearing loss, and kyphoscoliosis may be present or develop over time.
40.**(A).** Dislocation of the ocular lens (ectopia lentis) occurs in approximately 60-70% of patients, although it is not unique to the disorder.

41.**(B).** β-Blockers have traditionally been considered the standard of care in MFS and multiple small observational studies suggest there is a protective effect on aortic root growth, with the dose typically titrated to achieve a resting heart rate <100 beats/min during submaximal exercise.